

# **EXHIBIT 16**

**U.S. Patent No. 6,871,264**

Claim 1	Identification: Lenovo moto g stylus 5G (2022) <sup>1</sup>														
1. A processor integrated circuit capable of executing more than one instruction stream comprising:	<p><b>All applications - Motorola moto g STYLUS 5G (2022)</b></p> <p>All categories   Change device</p>  <p><b>Specifications</b></p> <p><b>Applications</b></p> <p><b>Connectivity</b></p> <p><b>General</b></p> <table><tbody><tr><td>(Handsfree) speaker:</td><td>✓</td></tr><tr><td>3.5mm jack:</td><td>✓</td></tr><tr><td>Battery capacity (mAh):</td><td>5000</td></tr><tr><td>Battery Type:</td><td>Li-Po</td></tr><tr><td>Changeable covers:</td><td></td></tr><tr><td>CPU clock rate (MHz/GHz):</td><td>Octa-core (2x2.2 GHz Kryo 660 Gold &amp; 6x1.7 GHz Kryo 660 Silver)</td></tr><tr><td>CPU type:</td><td>Qualcomm SM6375 Snapdragon 695 5G (6 nm)</td></tr></tbody></table> <p><a href="https://www.t-mobile.com/support/tutorials/device/motorola/moto-g-stylus-5g-2022/specifications">https://www.t-mobile.com/support/tutorials/device/motorola/moto-g-stylus-5g-2022/specifications</a></p>	(Handsfree) speaker:	✓	3.5mm jack:	✓	Battery capacity (mAh):	5000	Battery Type:	Li-Po	Changeable covers:		CPU clock rate (MHz/GHz):	Octa-core (2x2.2 GHz Kryo 660 Gold & 6x1.7 GHz Kryo 660 Silver)	CPU type:	Qualcomm SM6375 Snapdragon 695 5G (6 nm)
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<sup>1</sup> Additional infringing products include devices featuring ARM DynamIQ, sold or offered for sale by T-Mobile, including but not limited to, Motorola Edge+, Moto Edge 20, Google Pixel 6 Pro, and Google Pixel 6, Google Pixel 5, and Google Pixel 4 devices.

Moto g stylus 5G includes a Qualcomm Snapdragon 695 processor, which uses the Qualcomm Kryo 660, octa-core configuration.

[https://www.qualcomm.com/content/dam/qcomm-martech/dm-assets/documents/product\\_brief--snapdragon-695-5g-mobile-platform.pdf](https://www.qualcomm.com/content/dam/qcomm-martech/dm-assets/documents/product_brief--snapdragon-695-5g-mobile-platform.pdf)

	Snapdragon 6 Gen 1	Snapdragon 695	Snapdragon 690	Snapdragon 680
CPU	4x Cortex-A78 4x Cortex-A55	2x Kryo 660 (Cortex-A78) 6x Kryo 660 (Cortex-A55)	2x Kryo 560 (Cortex-A77) 6x Kryo 560 (Cortex-A55)	4x Kryo 260 (Cortex-A73) 4x Kryo 260 (Cortex-A53)

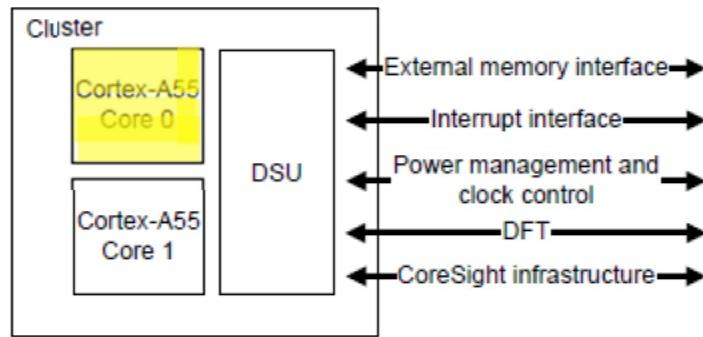
<https://www.androidauthority.com/qualcomm-snapdragon-soc-guide-908280/>

a first processor, coupled to fetch instructions and access data through a first cache controller;

The Cortex-A55 core is a mid-range, low-power core that implements the ARMv8-A architecture with support for the v8.2 extension, the RAS extension, the Load acquire (LDAPR) instructions introduced in the ARMv8.3 extension, and the Dot Product instructions introduced in the ARMv8.4 extension.

The core has a *Level 1* (L1) memory system, and private *Level 2* (L2) cache. The core is implemented inside the DynamIQ Shared Unit (DSU) as a Little core and is highly configurable with other cores.

The following figure shows an example of a dual-core configuration.



**Figure A1-1 Example dual-core configuration with homogeneous cores**

ARM® Cortex®-A55 Core, Revision r1p0, Technical Reference Manual

	<p>A first processor (core) of the four ARM Cortex A-55 cores is coupled to fetch instructions and access data through a cache controller of its private L1I and L1D caches.</p>
a second processor, coupled to fetch instructions and access data through a second cache controller;	

A second processor (core) of the four ARM Cortex A-55 cores is coupled to fetch instructions and access data through a cache controller of its private L1I and L1D caches.

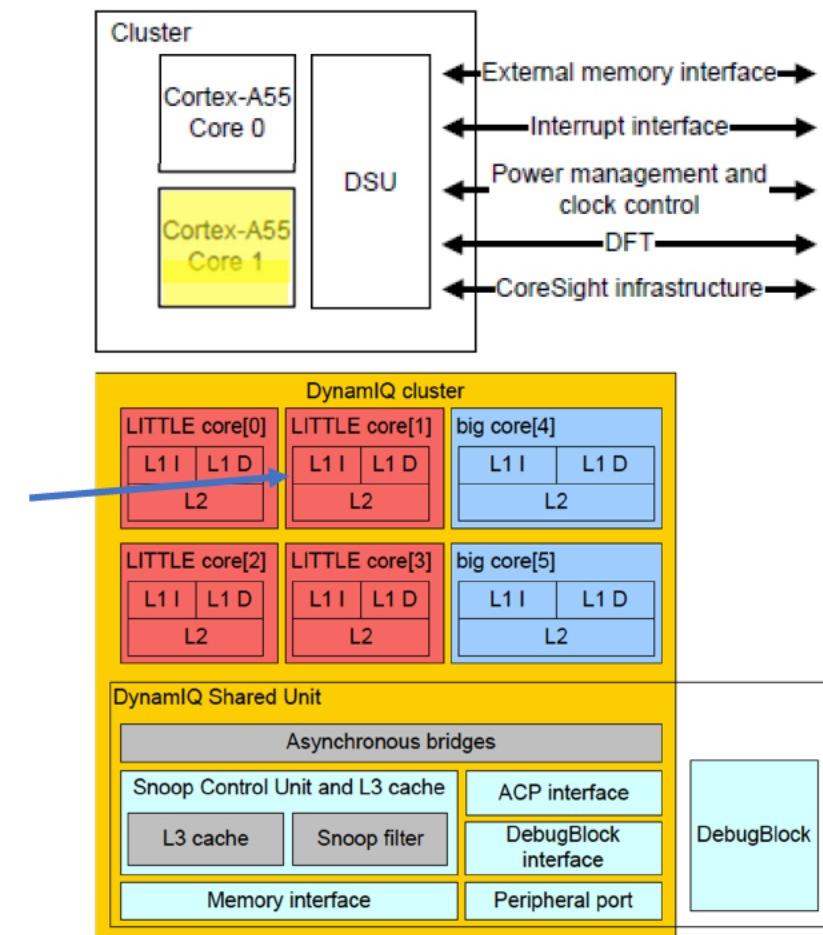
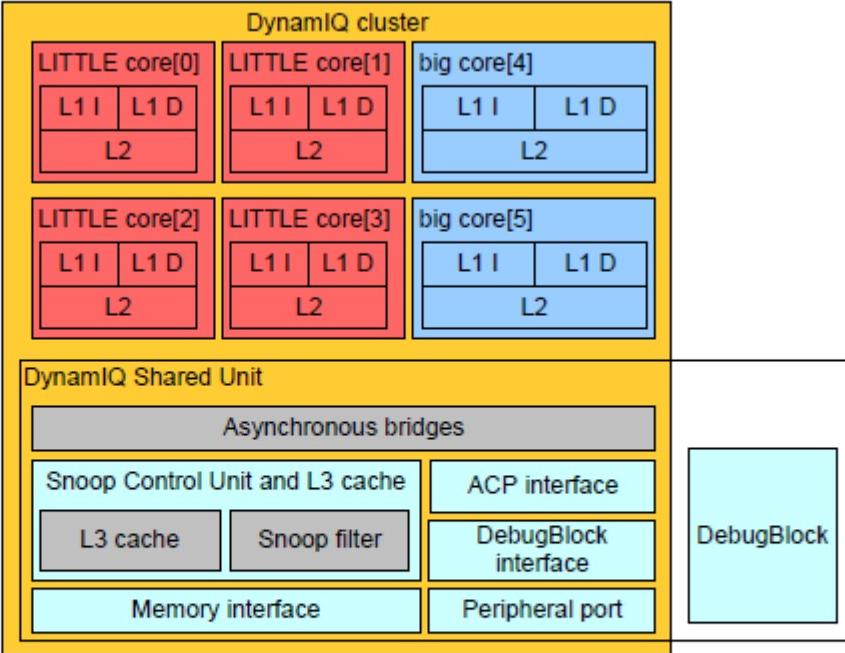


Figure A1-1 DynamIQ cluster

ARM® Cortex®-A55 Core, Revision r1p0, Technical Reference Manual, p. A1-26  
 Arm® DynamIQ™ Shared Unit, Revision r3p0, Technical Reference Manual, p. A1-20

a plurality of cache memory blocks;	<p>A plurality of cache memory blocks exists in the L3 cache shared by all ARM cores in a DynamIQ cluster and partitioned into groups of 4 cache ways (blocks).</p>  <p>The diagram illustrates the DynamIQ cluster architecture. At the top, a yellow box labeled "DynamIQ cluster" contains six cores arranged in a 2x3 grid. The cores are color-coded: four are "LITTLE core" (red) and two are "big core" (blue). Each core has an L1 cache (split into L1 I and L1 D) and an L2 cache. Below the cluster is a yellow box labeled "DynamIQ Shared Unit". Inside the DSU, there is an "Asynchronous bridges" section, followed by the "Snoop Control Unit and L3 cache" section which contains an "L3 cache" and a "Snoop filter". To the right of the SCU are the "ACP interface" and "DebugBlock interface". At the bottom of the DSU are the "Memory interface" and "Peripheral port". A separate "DebugBlock" is shown connected to the DSU.</p>
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**Figure A1-1 DynamIQ cluster**

Within the DSU, the L3 cache, the *Snoop Control Unit* (SCU), internal interfaces to the cores, and external interfaces to the SoC are present.

Arm® DynamIQ™ Shared Unit, Revision r3p0, Technical Reference Manual, p. A1-20

	<p><b>About the L3 cache</b></p> <p>The optional L3 cache is shared by all the cores in the cluster.</p> <p>The L3 cache supports a dynamically optimized allocation policy. Groups of cache ways can be partitioned and assigned to individual processes, allowing cache allocation to be fairly shared between processes.</p> <p>Arm® DynamIQ™ Shared Unit, Revision r3p0, Technical Reference Manual, p. A5-64</p>
a high-speed interconnect coupling the plurality of cache memory blocks to the first and second cache controllers such that at least one allocable cache memory block is capable of being used by the first and second cache controllers; and	<p>A high-speed interconnect (e.g., Coherent Interconnect) couples the cache memory blocks of shared L3 cache to the first and second cache controllers (e.g., of the L1D and L1I caches of the first and second cores).</p> <p><b>L3 cache allocation policy</b></p> <p>The L3 cache data allocation policy changes depending on the pattern of data usage.</p> <p>Exclusive allocation is used when data is allocated in only one core. Inclusive allocation is used when data is shared between cores.</p> <p>For example, an initial request from core 0 allocates data in the L1 or L2 caches but is not allocated in the L3 cache. When data is evicted from core 0, the evicted data is allocated in the L3 cache. The allocation policy of this cache line is still exclusive. If core 0 refetches the line, it is allocated in the L1 or L2 caches of core 0 and removed from the L3 cache, keeping the line exclusive. If core 1 then accesses the line for reading, it remains cached in core 0 and is also allocated in both core 1 and L3 caches. In this case, the line has inclusive allocation.</p> <p>Arm® DynamIQ™ Shared Unit, Revision r3p0, Technical Reference Manual, p. A5-65</p>

	<p>The diagram illustrates the DynamIQ™ Cluster architecture. It shows two clusters, each containing two cores. The left cluster is labeled 'big Core' and the right cluster is labeled 'LITTLE Core'. Each core has an L1 Data and L1 Instr cache. Below the cores are L2 caches. A 'Coherent Interconnect' block connects the two clusters. Below the clusters is a large 'Coherent Mesh Network' (LLC) block. Arrows indicate bidirectional communication between the cores, between the clusters via the interconnect, and between the clusters and the LLC.</p> <p><a href="https://community.arm.com/developer/ip-products/system/b/soc-design-blog/posts/using-portable-stimulus-in-the-arm-world-creating-bare-metal-sw-coherency-scenarios">https://community.arm.com/developer/ip-products/system/b/soc-design-blog/posts/using-portable-stimulus-in-the-arm-world-creating-bare-metal-sw-coherency-scenarios</a></p>
a resource allocation controller coupled to determine an accessing cache memory controller selected from the group consisting of the first and second cache memory controllers, whereby the accessing cache memory controller is allowed to	A resource allocation controller (e.g., part of the Snoop Control Unit and L3 cache) is coupled (e.g., to the CLUSTERPARTCR register) to determine an accessing cache memory controller selected from the first and second cache controllers, whereby the accessing cache memory controller is allowed to access the allocable cache memory block (in shared L3 cache).

access the allocable cache memory block, wherein the cache memory blocks are usable by the cache controllers to store data and instructions fetched from a random-access memory.

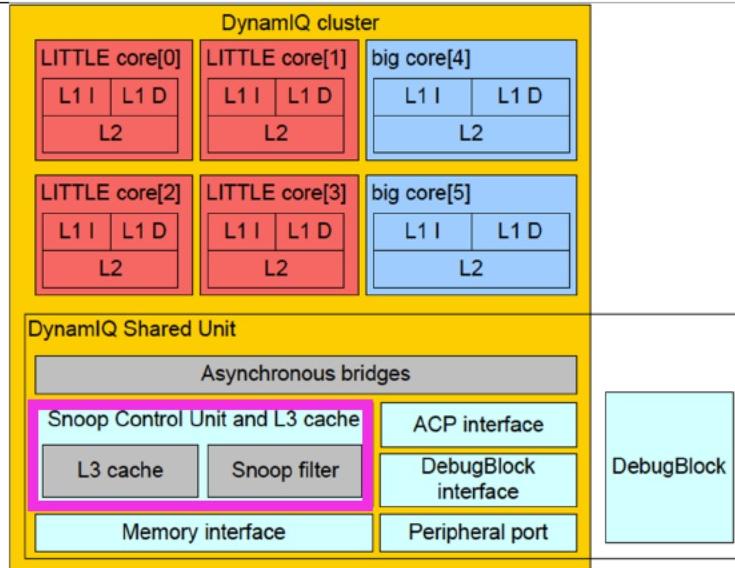


Figure A1-1 DynamIQ cluster

### About the L3 cache

The optional L3 cache is shared by all the cores in the cluster.

The L3 cache supports a dynamically optimized allocation policy. Groups of cache ways can be partitioned and assigned to individual processes, allowing cache allocation to be fairly shared between processes.

## L3 cache partitioning

The L3 cache supports a partitioning scheme that alters the victim selection policy to avoid one core (or one group of cores) from utilizing the entire cache at the expense of another core.

Cache partitioning is intended for specialized software where there are distinct classes of processes running with different cache access patterns.

For example, two processes (A and B) run on separate cores in the same cluster and therefore share the L3 cache. If process A is more data-intensive than process B, process A might cause all cache lines allocated by process B to be evicted. In this case, the performance of process B might be reduced.

In use, each core in the cluster must be assigned to one of the eight partition scheme IDs. The partitioning is done in groups of cache ways. Each group contains four cache ways. A group can be assigned as private to one or more scheme IDs, or it can be left unassigned. An unassigned group can be shared between all scheme IDs. Accesses from a given core can allocate into any cache way that is assigned as private to that core's partition scheme ID, or to any cache way that is shared.

Arm® DynamIQ™ Shared Unit, Revision r3p0, Technical Reference Manual, pp. A1-20, A5-64, A5-66

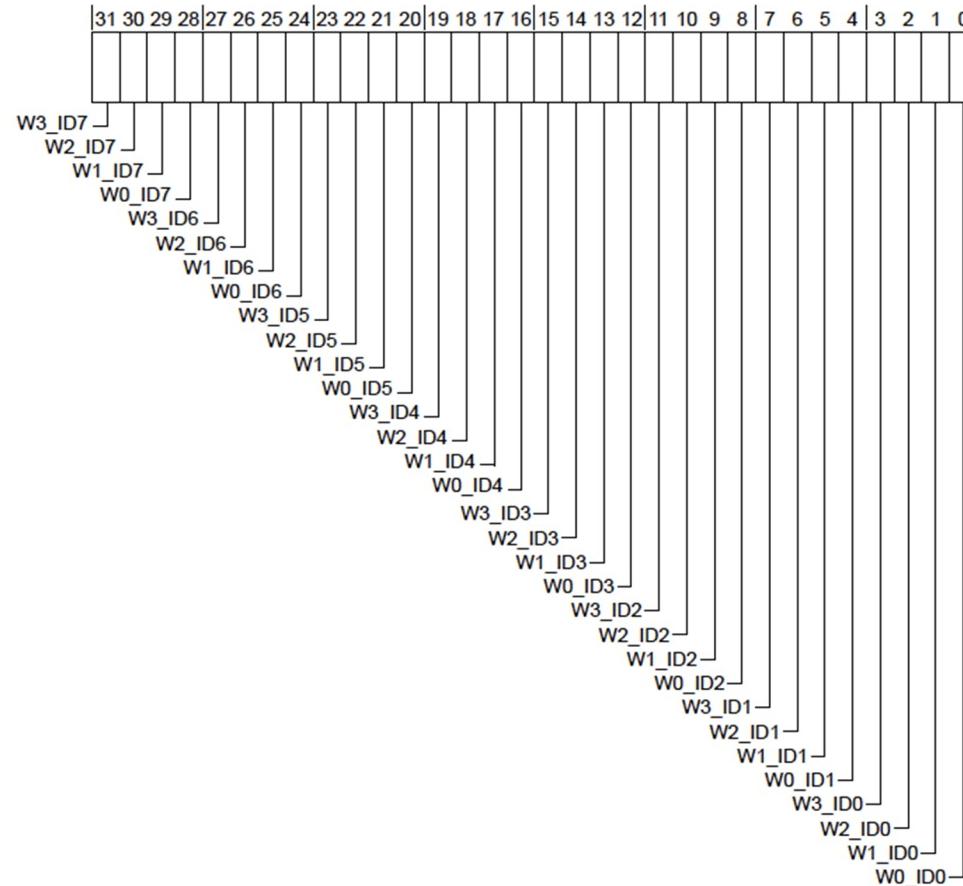
## **CLUSTERPARTCR, Cluster Partition Control Register**

The CLUSTERPARTCR register controls a group of ways to be marked as private to a scheme ID. This register is RW.

This description applies to both the AArch32 (CLUSTERPARTCR) and AArch64 (CLUSTERPARTCR\_EL1) registers.

## Bit field descriptions

**CLUSTERPARTCR** is a 32-bit register, and is part of SCU and L3 cache configuration registers.



**Figure B1-8 CLUSTERPARTCR bit assignments**

Each bit, if set, indicates that a group of four ways is allocated as private to that scheme ID. If more than one scheme ID assigns the same group of ways as private, then those ways are shared between the scheme IDs that have assigned them as private. All ways not assigned to any scheme ID are treated as shared between all scheme IDs. If a scheme ID does not have any private ways allocated, and there are no remaining shared ways, then any use of the scheme ID will allocate to way group 0, as this is considered a programming error.

Arm® DynamIQ™ Shared Unit, Revision r3p0, Technical Reference Manual, p. B1-132

The Lenovo moto g stylus 5G (2023) comes with 4GB of RAM

## **moto g stylus (2023) - Specifications**

### **Performance**

Operating System - Android™ 13

Internal Storage - 64GB

Sensors - Proximity sensor | Ambient light | Accelerometer | Gyroscope | SAR sensor | Magnetometer | Barometer | Fingerprint reader | Sensor Hub

Processor - MediaTek Helio G85 processor up to 2GHz octa-core CPU and Arm Mali-G52 GPU

Expandable Storage - Up to 1TB microSD card expandable

Memory (RAM) - 4GB

Security - Fingerprint reader | Face unlock

[https://en-us.support.motorola.com/app/answers/detail/a\\_id/173983/~moto-g-stylus-%282023%29---specifications](https://en-us.support.motorola.com/app/answers/detail/a_id/173983/~moto-g-stylus-%282023%29---specifications)